A1 cont'd

diaphragm 106, that is formed of a flexible material. That material may be silicon nitride.

Please replace the paragraph beginning at page 10, paragraph number [0038] with the following rewritten paragraph:

A2

In figure 3D, the sacrificial layer, here PSG and silison dioxide layer 310, may be removed using a 49 percent HF solution to release the silicon nitride diaphragm. After etching away the sacrificial/PSG layer, the cavity height will be decreased by about 10% due to the tensile stress of the LPCVD silicon nitride. This also leaves a vacuum chamber 331. This decrease may also be considered when optimizing the design.

Please replace the paragraph beginning at page 10, paragraph number [0041] with the following rewritten paragraph:

A3

In figure 3E, the polysilicon films 340, which will form the strain sensitive resistors, are deposited. There films may be 5000 angstroms in thickness. The films may be deposited, doped, and patterned to form the eventual sensing resistors. Each of the polysilicon films may be doped twice.

Please replace the paragraph beginning at page 11, paragraph number [0046] with the following rewritten paragraph:

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Figure 6 shows further details of the device. The temperature sensor includes a polysilicon thermistor 600 used for temperature compensation. Four silicon nitride diaphragms 500, 502, 504, 506 may be used. The multiple diaphragm configuration may be used to avoid the self-heating effect. Self heating may be due to the small diaphragm size, and thermal isolation within the vacuum cavity. Strain sensitive resistors 605 are allocated among the multiple diaphragms to increase the resistance and thereby decrease the total power consumed. Moreover, the power may be dissipated over a larger area to further reduce the power density. In an embodiment, half of the polysilicon resistors may be formed on the silicon nitride diaphragm, with the other half being formed on the silicon nitride diaphragm, with the other half being formed on the silicon substrate.

Please replace the paragraph beginning at page 12, paragraph number [0047] with the following rewritten paragraph:

Figure 6 shows the piezoresistors arranged as a Wheatstone bridge, with some of the resistors 615, 618 on the substrate, and others of the resistors 616, 617 on the diaphragm. This may be formed by resistors which are on the diaphragms, and to other

resistors which are off of the diaphragms, e.g. on the substrate.

Please replace the paragraph beginning at page 13, paragraph number [0049] with the following rewritten paragraph:

As the size of the diaphragm increases, the inventor found that cracks 800 may occur at boundaries of the diaphragm. These cracks may be especially problematic at areas of the edges of the sacrificial layer especially at areas of the bird's beak 805. For example, figure 8 shows how cracks may occur at those edge areas.

In the claims:

Please amend the claims as follows:

1. A device, comprising:

a substrate; and

a surface micromachined pressure sensor, formed on said substrate, and formed to be capable of sensing pressures that are greater than 6000 psi.

2. A device as in claim 1, wherein said pressure sensor includes at least a plurality of strain sensitive resistors.